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—	—	—	339	471	573	718	—	960	—	1184	1340	1652	1870
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Photochemistry. Radiation chemistry	144	245	393	—	633	763	887	993	1119	1225	1455	—	1982
Dispersions. Colloids	144	245	393	—	634	763	887	—	1119	—	1456	—	1984
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Hearing. Speech	155	248	397	—	643	767	891	998	1123	1228	1472	—	2018
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ch	R S B	Ч ч	s	R S B	С с
d	R S B	Д д	sh	R S B	Ш ш
e	R S B	Е е	shch	R	Щ щ
ě	R	Ё ё	sht	B	Ъ ъ
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f	R S B	Ф ф	t'	S	Ѧ ѧ
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kh	R S B	Х х	y	S	Ј ј
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m	R S B	М м	yu	R B	Ю ю
n	R S B	Н н	z	R S B	З з
n'	R B	Њ њ	zh	R S B	Ж ж
n'	S	Њ њ	'	R	Ѣ ѣ
o	R S B	О о	'	R B	Ѧ ѧ

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LIST OF JOURNALS

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It should be emphasized that an abstract is only published in "Science Abstracts" when an article or book is believed to be generally available. No abstracts are published of dissertations, reports or memoranda with limited circulation, unless copies have been deposited with several public libraries and are available from the publishers; nor of papers presented orally at meetings, unless precis of substantial length are published in the normal way. Thus the appearance of an abstract in "Science Abstracts" may generally be taken as an indication that the original is publicly available, and if it cannot be located in a library, application should be made to the publisher, at the address given in this list. In the case of books, the assistance of a bookseller should be sought. The original cannot be obtained from "Science Abstracts", though assistance will gladly be given in cases of special difficulty.

The contractions of journal titles used with the abstracts, while following the general form of those in the "World List of

Scientific Periodicals" (3rd ed. London, Butterworths Scientific Publications, 1952), differ from them in some cases, to enable the title of the journal to be recognized more readily. General similarity will be found with the contractions used in "Chemical Abstracts", which have recently been adopted by the journals of the American Institute of Physics. To assist in the interpretation of contracted titles, adjectives are printed with a small initial letter, unless they form part of a proper name.

For the benefit of those who are unfamiliar with the form and purpose of such abstracting periodicals as "Science Abstracts", it may be said that each abstract is a summary of an article (or book) published elsewhere, the title of the article (or its English translation) being given at the beginning of the abstract. The "reference", printed immediately after the title and author, gives the name and date of the journal where the article was printed and the appropriate pages. In general, title, author and reference are usually required for the unambiguous identification of an article (e.g. in a bibliography), though the reference alone is sufficient for the location of the article. For books, the town of publication, the name of the publisher, and the year are given in the reference.

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If no indication of language is given in the abstract, the article may be assumed to be in English. This does not necessarily hold, however, for abstracts reproduced from other abstracting periodicals giving no indication of language.

ACEC Rev. (Belgium)

ACEC Revue. — Ateliers de Constructions Electriques de Charleroi, Avenue Emile Rousseau, Marcinelle-Charleroi. [French-language edition].

AEG Mitt. (Germany)

AEG Mitteilungen. — Allgemeine Elektrizitäts-Gesellschaft, Hohenzollerndamm 150, Berlin-Grünwald. [A translation of selected articles is published as: AEG Progress].

AEG Progress (Germany)

AEG Progress. — Allgemeine Elektrizitäts-Gesellschaft, Hohenzollerndamm 150, Berlin-Grünwald. [English translations of selected articles from: AEG Mitteilungen].

AEI Engng (GB)

AEI Engineering (Formerly: AEI Engineering Review). — Associated Electrical Industries, 33 Grosvenor Place, London, S.W.1.

AEI Engng Rev. (GB)

AEI Engineering Review. — Title changed to: AEI Engineering [AEI Engng].

AEI Res. Lab. Repr. (GB)

AEI Research Laboratory Reprint. — Associated Electrical Industries, Rugby.

AEI tech. Monogr. (GB)

AEI Technical Monograph. — Associated Electrical Industries, Rugby.

ASTM Bull. (USA)

American Society for Testing Materials. Bulletin. — Title changed to: Materials Research and Standards [Materials Res. Stand.].

ATE J. (GB)

ATE Journal. — Automatic Telephone and Electric Co., Strowger Works, Liverpool 7.

AWA tech. Rev. (Australia)

AWA Technical Review. — Amalgamated Wireless Australasia, 554 Parramatta Road, Ashfield, New South Wales.

Abhandl. Braunsch. Wiss. Gesell. (Germany)

Abhandlungen der Braunschweigischen Wissenschaftlichen Gesellschaft. — Publisher: Friedr. Vieweg, Brunswick.

Abhandl. Deutschen Akad. Wiss. Berlin, Kl. Math. Phys. Tech. (Germany)

Abhandlungen der Deutschen Akademie der Wissenschaften, Klasse für Mathematik, Physik und Technik. — Publisher: Akademie-Verlag, Mohrenstrasse 39, Berlin W.8.

Acero y Energia (Spain)

Acero y Energia. — C. Berlin 46-50, Barcelona 15.

Acta chem. Scandinavica

Acta Chemica Scandinavica. — Ejnar Munksgaard, Nørregade 6, Copenhagen.

Acta cryst. (Internat.)

Acta Crystallographica. — International Union of Crystallography. Publisher: Ejnar Munksgaard, Nørregade 6, Copenhagen. Subscription address: Polycrystal Book Service, GPO Box 620, Brooklyn 1, N.Y.

Acta electronica (France)

Acta Electronica. — 23 Rue du Retrait, Paris 20.

Acta metallurgica (Internat.)

Acta Metallurgica. — 1 River Road, Schenectady, N.Y. Publisher: Pergamon Press (Acta Metallurgica), 122 East 57th Street, New York 22, N.Y.

Acta phys. Austriaca

Acta Physica Austriaca. — Springer-Verlag, Mölkerbastei 5, Vienna 1.

Acta phys. chem. Szeged (Hungary)

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Soviet Physics—JETP. — American Institute of Physics, 335 East 45th Street, New York 17, N.Y. [A translation of: Zhurnal Eksperimentalnoi i Teoreticheskoi Fiziki].

- Soviet Physics—Solid State (USA)**
Soviet Physics—Solid State. — American Institute of Physics
335 East 45th Street, New York 17, N.Y. [A translation of:
Fizika Tverdogo Tela].
- Soviet Physics—Technical Physics (USA)**
Soviet Physics—Technical Physics. — American Institute
of Physics, 335 East 45th Street, New York 17, N.Y.
[A translation of: Zhurnal Tekhnicheskoi Fiziki].
- Soviet Physics—Uspekhi (USA)**
Soviet Physics—Uspekhi. — American Institute of Physics,
335 East 45th Street, New York 17, N.Y. [A translation of
Uspekhi Fizicheskikh Nauk].
- State Inst. Tech. Res. Publ. (Finland)**
State Institute for Technical Research. Publications.
— Lönrotinkatu 37, Helsinki.
- State Inst. Tech. Res. Rep. (Finland)**
State Institute for Technical Research. Reports. Series II
(Metal and Electricity). — Lönrotinkatu 37, Helsinki.
- Stockholms Obs. Ann. (Sweden)**
Stockholms Observatoriums Annaler. — Publisher:
Almqvist & Wiksell, Stockholm.
- Stud. Cercetari Energetica (Roumania)**
Studii si Cercetări de Energetică. — Academiei Republicii
Populare Romine, 27 Calea Victoriei, Bucurest.
- Stud. Cercetari Fiz. (Roumania)**
Studii si Cercetări de Fizica. — Academiei Republicii
Populare Romine, 27 Calea Victoriei, Bucurest.
- Stud. Cercetari stiint., Fiz. Stiint. tehn. (Roumania)**
Studii și Cercetări Științifice. Fizică și Științe Tehnice.
— Academia Republicii Populare Romine. Subscription
address: Librăria Academiei RPR, Calea Victoriei 27,
Bucarest.
- Students' quart. J. Instn Elect. Engrs (GB)**
Students' Quarterly Journal of The Institution of Electrical
Engineers. — Savoy Place, London, W.C.2.
- Suppl. Progr. theor. Phys. (Japan)**
Supplement of the Progress of Theoretical Physics.
— Research Institute for Fundamental Physics, Physical
Society of Japan. Publication Office: Yukawa Hall,
Kyoto University, Kyoto.
- Svenska Elverksfören. Handl. (Sweden)**
Svenska Elverksföreningens Handlingar. — Drottninggatan
90 B, Stockholm 3.
- Svenska VattenkrFören. Publ. (Sweden)**
Svenska Vattenkraftföreningens Publikationer.
— Vasagatan 9, Stockholm C.
- Svenska VattenkrFören. Publ. Medd. (Sweden)**
Svenska Vattenkraftföreningens Publikationer. Meddelande.
— Vasagatan 9, Stockholm C.
- Svetotekhnika (USSR)**
Svetotekhnika. — Agent: Mezhdunarodnaya Kniga, Moscow.
- Sylvania Technol. (USA)**
Sylvania Technologist. — Title changed to: GT & E Research
& Development Journal [GT & E Res. Developm. J. (USA)].
- TMC tech. J. (GB)**
TMC Technical Journal. — Telephone Manufacturing
Company, Martell Road, West Dulwich, London, S.E.21.
- Tech. Chron. (Greece)**
Technika Chronika. — Technical Chamber of Greece,
4 Kolokotron St., Athens.
- Tech. Mitt. BRF (Germany)**
Technische Mitteilungen aus dem Betriebslaboratorium für
Rundfunk und Fernsehen (BRF). — Agastrasse, Berlin-
Adlershof.
- Tech. Mitt. Krupp (Germany)**
Technische Mitteilungen Krupp. — Fachbücherei Krupp,
Postfach 917, Essen.
- Tech. Mitt. PTT (Switzerland)**
Technische Mitteilungen PTT (Bulletin Technique PTT—
Bollettino Tecnico PTT). — Schweizerische Post-, Telefon-
und Telegraphen-Betrieben, Speichergasse 6, Bern.
- Tech. mod. (France)**
La Technique Moderne. — Dunod, 92 Rue Bonaparte, Paris 6.
- Tech. Rep. Engng Res. Inst. Kyoto Univ. (Japan)**
Technical Reports of the Engineering Research Institute of
Kyoto University. — Kyoto.
- Technica (Switzerland)**
Technica. — E. Birkhäuser, Elisabethenstrasse 19, Basle 10;
Birkhäuser Verlag, Stuttgart S.
- Technik (Germany)**
Technik. — VEB Verlag Technik, Oranienburgerstrasse
13/14, Berlin, C.2.
- Technol. Rep. Osaka Univ. (Japan)**
Technology Reports of the Osaka University. — Faculty of
Engineering, Osaka University, Higashinoda, Osaka.
- Technol. Rep. Tohoku Univ. (Japan)**
Technology Reports of the Tōhoku University. — Sendai,
Japan.
- Tecn. Ital.**
Tecnica Italiana. — Via Beccaria 6, Trieste.
- Tecnica (Portugal)**
Técnica. — Associação dos Estudantes do Instituto Superior
Técnico, Av. Rovisco Pais, Lisbon-N.
- Tekn. Forum (Finland)**
Tekniskt Forum. — Tekniska Föreningens i Finland,
Svenska Teaterhuset, Helsinki.
- Tekn. Skr. (Norway)**
Tekniske Skrifter. — Norske Ingeniørforening,
Kronprinsengate 17, Oslo.
- Tekn. Tidskrift (Sweden)**
Teknisk Tidskrift. — Svenska Teknologföreningen.
Box 841, Stockholm 1.
- Tekn. Ukeblad (Norway)**
Teknisk Ukeblad. — Norske Ingeniørforening og den
Polytekniske Forening, Kronprinsengate 17, Oslo 9.
- Tekn.-vetensk. Forskn. (TVF) (Sweden)**
TVF Teknisk-Vetenskaplig Forskning. — Ingeniörs-
VetenskapsAkademien [Royal Swedish Academy of
Engineering Sciences], Box 5073, Stockholm 5.
- Tele (Sweden)**
Tele. Meddelanden från Kungliga Telestyrelsen.
— Stockholm. [Published in two editions, English and
Swedish. The Swedish edition appears four times a year;
the English edition appears twice a year].
- Telecommunications (India)**
Telecommunications. — Ridge Road, Jabalpur (MP), India.
- Telecomunicatii (Roumania)**
Telecomunicatii. — Str. Ion Ghica 3, Bucurest.
- Telefunken-Röhre (Germany)**
Telefunken-Röhre. — Telefunken, Soflinger Strasse 100,
Ulm/Donau.
- Telefunken Ztg (Germany)**
Telefunken Zeitung. — Telefunken GmbH, Ernst-Reuter-
Platz 1, Berlin-Charlottenburg 1.
- Telegr. en Telef. (Netherlands)**
Telegraaf en Telefoon. — Vereniging van Hoger Personeel
der PTT. Publication address: P. Bolhuis, Perenstraat 187,
The Hague.
- Teletronikk (Norway)**
Teletronikk. — Telegrafstyrets Bibliotek,
Kongensgt. 21, Oslo.
- Teleteknik (Denmark)**
Teleteknik. — Post-og Telegrafvaesenet og de Koncessionerede
Telefonselskaber i Danmark, Valkendorfsgrde 9.
Copenhagen K. [English translations of selected articles
from the Danish Edition are published in an English Edition,
and also occasional articles not appearing in the Danish
Edition].
- Tellus (Sweden)**
Tellus. — Svenska Geofysiska Föreningen. Subscription
address: Lindhagensgatan 124, Stockholm.
- Textile res. J. (USA)**
Textile Research Journal. — Textile Research Institute,
Publications Department, PO Box 625, Princeton, New Jersey.
- Tijdschrift Ned. Radiogenoot. (Netherlands)**
Tijdschrift van het Nederlands Radiogenootschap.
— Editor: Prinses Marijkelaan 7, Leidschendam,
Netherlands.
- Tokyo astron. Bull. (Japan)**
Tokyo Astronomical Bulletin. — Tokyo Astronomical
Observatory, University of Tokyo, Mitaka, Tokyo.
- Toshiba Rev. [Internat. Ed.] (Japan)**
Toshiba Review [International Edition]—Tokyo Shibaura
Electric Co., Tokyo.

LIST OF JOURNALS

- Trans Amer. Inst. Elect. Engrs
Transactions of the American Institute of Electrical Engineers. (Part I. Published bimonthly as: Communication and Electronics. Part II. Published bimonthly as: Applications and Industry. Part III. Published bimonthly as: Power Apparatus and Systems). — 345 East 47 Street, New York 17, N.Y.
- Trans Bose Res. Inst. (India)
Transactions of the Bose Research Institute, Calcutta. — 93/1 Acharya Prafulla Chandra Road, Calcutta 9.
- Trans Brit. Ceram. Soc.
Transactions of the British Ceramic Society. — Fédération House, Station Road, Stoke-on-Trent, Staffordshire, England.
- Trans Engng Inst. Canada
Transactions of the Engineering Institute of Canada. — 2050 Mansfield Street, Montreal 2.
- Trans Faraday Soc. (GB)
Transactions of the Faraday Society. — 6 Gray's Inn Square, London, W.C.1. Publisher: Aberdeen University Press, 6 Upper Kirkgate, Aberdeen.
- Trans Illum. Engng Soc. (GB)
Transactions of the Illuminating Engineering Society. — 32 Victoria Street, London, S.W.1.
- Trans Inst. Marine Engrs (GB)
Transactions of the Institute of Marine Engineers. — Memorial Building, 76 Mark Lane, E.C.3.
- Trans Inst. Metal Finishing (GB)
Transactions of the Institute of Metal Finishing. — 32 Great Ormond Street, London, W.C.1.
- Trans Instn Engrs Shipbld. Scotland
Transactions of the Institution of Engineers and Shipbuilders in Scotland. — 39, Elmbank Crescent, Glasgow, C.2.
- Trans Instn Naval Archit. (GB)
Transactions of the Institution of Naval Architects. — Title changed to: Transactions of the Royal Institution of Naval Architects [Trans Roy. Instn Naval Archit.].
- Trans N.E. Coast Instn Engrs Shipbld. (GB)
Transactions of the North East Coast Institution of Engineers and Shipbuilders. — Bolbec Hall, Newcastle upon Tyne 1.
- Trans Plastics Inst.
Transactions of the Plastics Institute. — 6 Mandeville Place, London, W.1.
- Trans Roy. Instn Naval Archit. (GB)
Transactions of the Royal Institution of Naval Architects (Formerly: Transactions of the Institution of Naval Architects). — 10 Upper Belgrave Street, London, S.W.1.
- Trans Roy. Soc. Canada
Transactions of the Royal Society of Canada. Section III: Chemical, Mathematical and Physical Sciences. — National Research Building, Ottawa.
- Trans Roy. Soc. Edinburgh (GB)
Transactions of the Royal Society of Edinburgh. — 22 George Street, Edinburgh 2.
- Trans Roy. Soc. S. Africa
Transactions of the Royal Society of South Africa. — University of Cape Town, Rondebosch.
- Trans S. African Inst. Elect. Engrs
Transactions of the South African Institute of Electrical Engineers. — Kelvin House, Marshall and Holland Streets, Johannesburg.
- Trans Soc. Instrum. Technol. (GB)
Transactions of the Society of Instrument Technology. — 20, Queen Anne Street, London, W.1.
- Trudy Inst. Energetiki i Elektrotekh. Akad. Nauk Latv. SSR
Trudy Instituta Energetiki i Elektrotekhnik, Akademiyi Nauk Latvīskoī SSR. — Publication address: Akademiyi Nauk Latvīskoī SSR, Riga.
- URSI Inform. Bull. (Internat.)
URSI Information Bulletin. — 7 Place Emile Danco, Brussels.
- Ukrayin. fiz. Zh. (USSR)
Ukrayins'k'yi Fizychn'yi Zhurnal. — Akademiya Nauk Ukrayins'koyi RSR. Editorial address: Velyka Kytayivs'ka 144, Kiev.
- Univ. Bergen Arbok (Norway)
Universitet i Bergen Arbok. Naturvitenskapelig Rekke. — Title changed to: Arbok for Universitetet i Bergen. Mat.-Naturv. Serie [Arbok Univ. Bergen mat.-nat. Ser.].
- Uspekhi fiz. Nauk (USSR)
Uspekhi Fizicheskikh Nauk. — Agent: Mezhdunarodnaya Kniga, Moscow. [A translation is published as: Soviet Physics—Uspekhi].
- Uspekhi mat. Nauk (USSR)
Uspekhi Matematicheskikh Nauk. — Agent: Mezhdunarodnaya Kniga, Moscow.
- VDE Fachber. (Germany)
VDE Fachberichte. — Verband Deutscher Elektrotechniker. Publication address: VDE Verlag, Bismarckstrasse 33, Berlin-Charlottenburg 2
- VDI Z. (Germany)
VDI Zeitschrift. — Verein Deutscher Ingenieure, Prinz Georg Strasse 77/79, Düsseldorf. Publisher: VDI-Verlag, Bongardstrasse 3, Düsseldorf.
- Vacuum (GB)
Vacuum. — Pergamon Press, Headington Hill Hall, Oxford; 122 East 55th Street, New York 22, N.Y.
- Verhandl. K. Vlaamse Acad. Wetensch. (Belgium)
Verhandelingen van de Koninklijke Vlaamse Academie voor Wetenschappen, Letteren en Schone Kunsten van België. — Paleis der Academiën, Hertogsstraat 1, Brussels.
- Vide (France)
Le Vide. — Société Française des Ingénieurs et Techniciens du Vide, 147 ter A, Boulevard de Strasbourg, Nogent-sur-Marne (Seine).
- Vision Res. (GB)
Vision Research. — Pergamon Press, Headington Hill Hall, Oxford; 122 East 55th Street, New York 22, N.Y.
- Votre Electricite (Belgium)
Votre Électricité. Bulletin de l'Union des Exploitations Électriques en Belgique. — 4 Galerie Ravenstein, Brussels 1.
- WSW tech. Ber. (Austria)
WSW Technische Berichte. — Siemens und Halske, Wiener Schwachstrom Werke, Apostelgasse 12, Vienna 3.
- Water Power (GB)
Water Power. — Tothill Press, 33 Tothill Street, London, S.W.1.
- Wear (Netherlands)
Wear. — Elsevier Publishing Company, 110-112 Spuistraat, Amsterdam.
- Weld. J. (GB)
Welding Journal. — [Abstracted by Associated Electrical Industries, Manchester].
- Westinghouse Engr (USA)
Westinghouse Engineer. — PO Box 2278, 3 Gateway Center, Pittsburgh 30, Pennsylvania.
- Wireless World (GB)
Wireless World. — Iliffe Electrical Publications, Dorset House, Stamford Street, London, S.E.1.
- Wiss. Z. Hochsch. Elektrotech. Ilmenau (Germany)
Wissenschaftliche Zeitschrift der Hochschule für Elektrotechnik Ilmenau. — Ilmenau, Germany.
- Wiss. Z. Hochsch. Maschinenbau Karl-Marx-Stadt (Germany)
Wissenschaftliche Zeitschrift der Hochschule für Maschinenbau Karl-Marx-Stadt. — Karl-Marx-Stadt, Germany.
- Wiss. Z. Humboldt-Univ. Berlin, math.-nat. Reihe (Germany)
Wissenschaftliche Zeitschrift der Humboldt-Universität zu Berlin, Mathematisch-naturwissenschaftliche Reihe. — Unter den Linden 6, Berlin, W.8.
- Wiss. Z. Tech. Hochsch. Dresden (Germany)
Wissenschaftliche Zeitschrift der Technischen Hochschule Dresden. — Mommsenstrasse 11, Dresden, A 27.
- World Power Conf., Gen. Rep. and Papers
General Reports and Papers read before the World Power Conference. — The International Executive Council, 201-2 Grand Buildings, Trafalgar Square, London, W.C.2.
- Z. angew. Math. Mech. (Germany)
Zeitschrift für angewandte Mathematik und Mechanik. — Akademie-Verlag, Leipziger Strasse 3-4, Berlin, W.8.
- Z. angew. Math. Phys. (Switzerland)
Zeitschrift für angewandte Mathematik und Physik. — Verlag Birkhäuser, Elisabethenstrasse 15, Basle 10.

LIST OF JOURNALS

- angew. Phys. (Germany)
Zeitschrift für angewandte Physik. — Springer-Verlag,
Heidelberger Platz 3, Berlin-Wilmersdorf;
Postfach 3027, Heidelberg 1.
- Astrophys. (Germany)
Zeitschrift für Astrophysik. — Springer-Verlag, Heidelberger
Platz 3, Berlin-Wilmersdorf; Postfach 3027, Heidelberg 1.
- Elektrochem. (Germany)
Zeitschrift für Elektrochemie. — Verlag Chemie, Postfach
149, Papellallee 3, Weinheim/Bergstrasse.
- InstrumKde (Germany)
Zeitschrift für Instrumentenkunde. — Friedr. Vieweg,
Postfach 185, Burgplatz 1, Brunswick.
- Naturforsch. (Germany)
Zeitschrift für Naturforschung (a: Astrophysik, Physik und
physikalische Chemie). — (14b) Postfach 61, Tübingen.
- Phys. (Germany)
Zeitschrift für Physik. — Springer-Verlag, Heidelberger
Platz 3, Berlin-Wilmersdorf; Postfach 3027, Heidelberg 1.
- Z. phys. Chem. (Germany)
Zeitschrift für physikalische Chemie. — Akademische
Verlagsgesellschaft Geest und Portig K.-G.,
Sternwartenstrasse 8, Leipzig, C.1.
- Z. wiss. Mikr. (Germany)
Zeitschrift für wissenschaftliche Mikroskopie und
mikroskopische Technik. — S. Hirzel Verlag, Stuttgart.
- Z. wiss. Photogr. (Germany)
Zeitschrift für wissenschaftliche Photographie, Photophysik
und Photochemie. — J.A. Barth, Salomonstrasse 18B,
Leipzig, C.1.
- Zh. eksper. teor. Fiz. (USSR)
Zhurnal Eksperimentalnoi i Teoreticheskoi Fiziki.
— Akademiya Nauk SSSR, Lenin Prospekt, Moscow.
[A translation is published as Soviet Physics-JETP].
- Zh. tekh. Fiz. (USSR)
Zhurnal Tekhnicheskoi Fiziki. — Akademiya Nauk SSSR,
Lenin Prospekt, Moscow. [A translation is published as
Soviet Physics-Technical Physics].

ABSTRACTING JOURNALS

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Applied Mechanics Reviews

American Society of Mechanical Engineers, United Engineering Centre, 345, East 47 Street, New York 17, N.Y.
Editorial Office: Southwest Research Institute, 8500 Culebra Road, San Antonio 6, Texas.

Associated Electrical Industries (Manchester)

Associated Electrical Industries (Manchester) Limited, Research Laboratory Technical News Bulletin (Formerly: Metropolitan-Vickers Technical News Bulletin. — Trafford Park, Manchester 17.

Central Electricity Generating Board Digest

Friars House, 157-168 Blackfriars Road, London, S.E.1.

Copper Abstracts

Copper Development Association, 55 South Audley Street, London, W.1.

Electrical Research Association

British Electrical and Allied Industries Research Association, Cleeve Road, Leatherhead, Surrey.

Inst. Internat. du Froid

Bulletin de l'Institut International du Froid. — 177 Boulevard Malesherbes, Paris 17.

Instrument Abstracts

Instrument Abstracts. (Formerly: Bulletin of the British Scientific Instrument Research Association). — Compiled by the British Scientific Instrument Research Association (SIRA) and published by Taylor and Francis, Red Lion Court, Fleet Street, London, E.C.4.

Mathematical Reviews

American Mathematical Society, 190 Hope Street, Providence 6, Rhode Island.

Metallurgical Abstracts

Institute of Metals, 17 Belgrave Square, London, S.W.1.

Meteorological and Geostrophysical Abstracts

American Meteorological Society, 45 Beacon Street, Boston 8, Massachusetts.

Metropolitan-Vickers

Metropolitan-Vickers Technical News Bulletin. — Title changed to: Associated Electrical Industries (Manchester) Limited, Research Laboratory Technical News Bulletin [Signature: Associated Electrical Industries (Manchester)].

Nuclear Science Abstracts

U.S. Atomic Energy Commission Office of Technical Information, PO Box 62, Oak Ridge, Tennessee. Obtainable from: U.S. Government Printing Office, Washington 25, D.C.

Photographic Abstracts

Royal Photographic Society of Great Britain, 16 Princes Gate, London, S.W.7.

Railway Engineering Abstracts

Published by The Institution of Civil Engineers in association with British Railways and London Transport Executive. Subscription address: Institution of Civil Engineers, Great George Street, Westminster, London, S.W.1.

Rheology Abstracts

Published for the British Society of Rheology by: Pergamon Press, 4 and 5 Fitzroy Square, London, W.1; 122 East 55th Street, New York 22, N.Y.

Scientific Instrument Research Association

Bulletin of the British Scientific Instrument Research Association. — Title changed to: Instrument Abstracts.

ERRATA

Abstr. 12785 (1959) line 2: for "D.G.Whitfield" read "G.D.Whitfield".
 Author Index (1959) p. 1525, column 1: for "D.G.Whitfield" read "G.D.Whitfield".

Reactor Science, Vol. 11, No. 2-4 (Feb., 1960); Vol. 12, No. 1-2 (May, 1960); Vol. 12, No. 3 (June, 1960):
 In some of the abstracts covering the above issues the journal reference has been given as "Reactor Sci. Technol." instead of "Reactor Sci.".

Abstr. 5228 (1960) line 4: for "No. 37" read "No. 36".

Abstr. 5618 (1960) line 4: for "Chzhou Guan-Chzao" read "Chzhou Guan-Chzhao".

Abstr. 6036, 6597, 6611, 19379 (1960), journal reference:
 for "math.-phys. Kl.IIa" read "II. math.-phys. Kl.".

Abstr. 7336 (1960) line 4: for "1614" read "1614-15".

Abstr. 7464 (1960): insert journal reference: Phys. Rev. Letters, Vol. 4, No. 4, 181-2 (Feb. 15, 1960).

line 4: insert "y" before "-radiation".

Abstr. 8570 (1960) line 1: for "FEYMAN" read "FEYNMAN".

Abstr. 8666 (1960) line 4: for "C.L.van P.van Eck" read "C.L.van Panthaleon van Eck".

Abstr. 8701 (1960) line 1: for "VIRAL" read "VIRIAL".

Abstr. 8751 (1960) line 2: for "P.Tamarkins" read "P.Tamarkin".

Abstr. 10136 (1960) line 2: for "E.A.Anderson" read "E.E.Anderson".

Abstr. 10931 (1960) line 2: for "Yu.N.Barabenekov" read "Yu.N.Barabanekov".

Abstr. 11248 (1960) line 3: for "M.A.Pomeranyz" read "M.A.Pomerantz".

Abstr. 13806 (1960) line 2: for "A.W.Mc Reynolds" read "A.W.McReynolds".

Abstr. 14414-16 (1960) line 1: for "CHARTS OF THE BALANCE" read "DEVIATIONS FROM EQUILIBRIUM".

Abstr. 15204 (1960) line 4: for "Tsai-Chii" read "Tsai-Chd".

Abstr. 16411 (1960) line 8: for "introduction type" read "induction type".

Abstr. 18096 (1960) line 7: for "(Fe₂O₃)" read "(Fe₂O₃)".

Abstr. 18741 (1960) line 2: for "M.Schwarzchild" read "M.Schwarzschild".

Abstr. 18922 (1960) line 10: for "200 m" read "2000 m".

Abstr. 19188 (1960) line 3: for "K.Chul-Soo" read "C.S.Kim".

Abstr. 19329 (1960) line 3: delete "In German";

line 16: for "desirable" read "undesirable".

Abstr. 19632 (1960) line 3: for "A.V.Vorob'ev" read "A.A.Vorob'ev".

Abstr. 19957 (1960) line 4: for "Abstr. 2308" read "Abstr. 2308 of 1956".

Abstr. 20778 (1960) line 3: for "A.A.Lipkin" read "A.A.Lipnik".

Abstr. 21341 (1960) line 2: for "I" read "I(1)".

October (1960) p. 1595, column 2: for abstract number "161678" read "16178".

Author Index (1960), p. 2445b: add "0=11608" to first entry under "Toyozaawa, Y.".

Abstr. 176 (1961) line 2: for "F.A.Mason" read "E.A.Mason".

Abstr. 440, 788, 979, 2374 (1961) journal reference: for "(1960)" read "(1961)".

Abstr. 494 (1961) line 2: for "NUCLEAR" read "NUCLEON".

Abstr. 993 (1961) line 4: for "cleared" read "cleaved".

Abstr. 1585 (1961) line 2: for "W.H.Cambell" read "W.H.Campbell".

Abstr. 1692 (1961): title and author should read: "AN INTERPRETATION OF THE LORENTZ TRANSFORMATION CO-ORDINATES. S.J.Prokhovnik".

Abstr. 2099 (1961) line 6: for "M.I.Solov'iev" read "M.I.Solov'ev".

Abstr. 2545, 2549 (1961) line 4: insert "2386" as abstract number.

Abstr. 2990 (1961) line 3: for "L.P.Lukirskii" read "A.P.Lukirskii".

Abstr. 3275 (1961) line 3: for "G.A.Milechin" read "G.A.Milekhin".

Abstr. 3288 (1961) line 3: for "G.U.Kulikov" read "G.V.Kulikov".

Abstr. 3291 (1961) line 3: for "Y.A.Smorodin" read "Yu.A.Smorodin".

Abstr. 3346 (1961) line 5: for "G.I.Inozemtseva" read "O.I.Inozemtseva".

Abstr. 3675 (1961) line 11: delete "English translation in: Soviet Physics—Doklady (USA)".

Abstr. 3972 (1961): insert Abstractor's signature "J.K.Skwirzynski" at end of abstract.

Abstr. 5456 (1961) line 4: for "Ya.F.Volkob" read "Ya.F.Volkov".

Abstr. 6827 (1961) line 2: for "FLUID" read "LIQUID".

Abstr. 6833 (1961) line 16: for "section" read "selection".

Abstr. 7030 (1961) line 3: for "Brifford" read "Briffod".

Abstr. 7454 (1961) line 5: for $(\oint \psi_V, \psi_V dr)^2$ read $(\int \psi_V, \psi_V dr)^2$

Abstr. 8116 (1961) line 3: for "H.S.Ramo Rao" read "H.S.Rama Rao".

Abstr. 8423 (1961) line 3: for "No. 5" read "No. 6".

Abstr. 8473 (1961) line 6: for " ν -A theory" read " V -A theory".

ERRATA

- Abstr. 8493 (1961) line 9: for " $\tau = 0$ state" read " $I = 0$ state".
- Abstr. 9224 (1961) line 3: for "No. 1" read "No. 4".
- Abstr. 9248 (1961) line 4: for "991" read "991-2";
line 10: for "infrared" read "inferred".
- Abstr. 9265 (1961) line 9: for " A^{36} " read " A^{36u} ".
- Abstr. 9382 (1961) line 2: for "K.Heizinger" read "K.Heinzinger".
- Abstr. 9683 (1961) line 3: for "D.Deschamps" read "D.Descamps".
- Abstr. 11891 (1961) line 20: after "difference" insert "between".
- Abstr. 11979 (1961) line 3: for "O.F.Nyemetz" read "O.F.Nyemets".
- Abstr. 12201 (1961) line 2: for "I.A.Tot'skyi" read "I.A.Tots'kyi".
- Abstr. 12222 (1961) table, under Carbon: for " 86 ± 550 " read " 86 ± 55 ".
- Abstr. 12234 (1961) line 17: for "sodium band" read "sodium bond".
- Abstr. 12261 (1961) line 7: for "devised" read "derived".
- Abstr. 12311 (1961) line 3: for "C.Berthet" read "G.Berthet".
- Abstr. 12420 (1961): for end of text see Abstr. 12426 (1961) lines 7 to end.
- Abstr. 12426 (1961): for line 7 of text to end see top of right-hand column,
p. 1199.
- Abstr. 12531 (1961) line 9: for "Fe-Fe lattice" read "FeTe lattice".
- Abstr. 12823 (1961) line 3: for "Ya.V.Tsekhmistrenko" read
"Yu.V.Tsekhmistrenko".
- Abstr. 12879 (1961) line 2: for "O.Z.Golik" read "O.Z.Holik".
- Abstr. 14121 (1961) line 2: for "I.S.Srivastava" read "I.B.Srivastava".
- Abstr. 14622 (1961) line 3: for "V.S.Neshpor" read "V.S.Neshpor".
- Author Index (1961) p. 2054b: for "Berthet,C." read "Berthet,G.".
 - p. 2104b: for "Descamps,D." read "Descamps,D.".
 - p. 2146b: for "Golik,O.Z." read "Holik,O.Z.".
 - p. 2166b: for "Heizinger,K." read "Heinzinger,K.".
 - p. 2182a: for "Inozemtseva,G.I." read "Inozemtseva,O.I.".
 - p. 2219a: for "Kulikov,G.U." read "Kulikov,G.V.".
 - p. 2237b: for "Lukirskii,L.P." read "Lukirskii,A.P.".
 - p. 2250a: for "Mason,F.A." read "Mason,E.A.".
 - p. 2274b: insert "Neshpor,V.S.,Nikolayeva,L.H. and
Karal'nik,S.M. Investigation of the
characteristic X-ray absorption of transition
metal silicides, 1=14622".
 - p. 2279b: for "Nyemetz,O.F." read "Nyemets,O.F.".
 - p. 2351a: for "Solov'iev,M.I." read "Solov'ev,M.I.".
 - p. 2353b: for "Srivastava,I.S." read "Srivastava,I.B.".
 - p. 2376a: for "Tot'skyi,I.A." read "Tots'kyi,I.A.".
 - p. 2378a: for "Tsekhmistrenko,Ya.V." read
"Tsekhmistrenko,Yu.V.".
 - p. 2391b: for "Volkob,Ya.F." read "Volkov,Ya.F.".

SUBJECT INDEX

INTRODUCTION.

The entries in this index refer to the abstracts by their serial number, not by the page number. The entries are grouped under headings (underlined, e.g. "Abrasion") which represent, in the main, general categories or concepts rather than specific names. If a heading for a particular subject does not appear, a more general heading should be consulted; for example, "Zone plates" would be listed under "Diffraction"; "Barkhausen discontinuities" under "Magnetization process". There are numerous cross-references directing attention to related headings in other parts of the index.

Many of the headings are subdivided by the use of subheadings, which are indented (i.e. printed slightly to the right) and commence with a small letter (for example, see the subheadings under "Absorption").

ARRANGEMENT OF HEADINGS AND SUBHEADINGS.

The headings are arranged throughout the index in alphabetical order according to British Standard 1749:1951 (the "word by word" system, not "reading right through"). The subheadings, with a few exceptions, are themselves arranged in alphabetical order under their respective headings. The exceptions (for example, see the subheadings under "Spectra", "Crystal structure, atomic") are cases where a more logical order is preferable to a purely alphabetical one.

ARRANGEMENTS OF ENTRIES UNDER HEADINGS.

Entries are arranged in three alphabetical groups as follows. First group: generalities; second group: named substances (in words); third group: named substances (chemical formulae). If a search is being made for a particular substance, both the second and third alphabetical groups should be inspected since, for example, alumina may also be listed as Al_2O_3 .

COLLECTED LIST OF SUBJECT HEADINGS.

The alphabetical arrangement of the headings is the most convenient for locating a known heading quickly, but there may be other related headings elsewhere in the index of which the reader is unaware, and which he would only come across by accident. To assist the reader to discover all the headings appropriate to his subject, a collected list of the headings is given at the end of the index, which should be consulted as a matter of routine each time a search is made. In this list, the headings are not arranged in alphabetical order, but are grouped into sections by subject on the same basis as the arrangement of the abstracts in the monthly issues of Physics Abstracts. By using this list, the reader can quickly determine which are the headings appropriate to his subject, and they are then easily found in the main index in their alphabetical position.

HEADINGS WITH NO ENTRIES.

Because physics is a developing subject, it is not possible to maintain the list of headings unchanged from year to year; it is subject to a continuous process of revision, with the introduction of new headings and subheadings, and the alteration and elimination of old ones. This process is a gradual one, however, and the great majority of the headings are the same as those of the previous year. To assist in maintaining the continuity of the index, all the headings in current use are printed each year, even those for which there are no abstracts to be recorded in the present volume. The latter are followed by the announcement "No entries this year"; this supplies confirmation that these headings have not been dropped from the index, and entries may reappear under them next year.

ELEMENTS, COMPOUNDS AND OTHER SUBSTANCES.

The names of elements, their compounds, a few compounds of special interest (e.g. "Water") and a few common materials (e.g. "Wood", "Paper") are included as headings. Under these, as well as under the appropriate "subject" headings, are listed any abstracts which contain significant physical information about the element, compound or substance named; except, however, that abstracts listed under the following headings are not necessarily also listed under the substance name:

Atoms	Spectra
Molecules	Luminescence
Crystal structure, atomic	Raman spectra
All headings referring to nuclear properties, including Radioactivity	

(The entries under these headings are themselves arranged in alphabetical order of substance or or nuclide names, so that a given substance can be readily located).

Inorganic compounds of the elements are listed under the first element in the chemical formula, and all the compounds of a given element are grouped under a single heading (e.g. "Sodium compounds"). All alloys are grouped under the single heading "Alloys" in alphabetical order of the first constituent. All organic compounds are grouped under the single heading "Organic compounds", except polymers which are grouped under "Polymers", and those under special substance headings such as "Paper"; all the latter are listed in the collected list of headings at the end of the index.

BEFORE USING INDEX, CONSULT LIST OF SUBJECT HEADINGS PRINTED AT THE END

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Night sky

See Airglow.

Nightglow

See Airglow.

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Nuclear forces
Collision processes
Nuclear reactions
 chemical effects
Nuclear reactions due to
 alpha-rays
 cosmic rays
 deuterons
 electrons
 helium-3
 mesons
 neutrons
 nuclei of $Z > 2$
 photons
 protons
 tritons

Thermonuclear reactions
Nuclear fission
 products
Nuclear fusion
Nuclear spallations

Physical effects of radiations
Chemical effects of radiations
 ionizing radiations
Biological effects of radiations
Radiation monitoring
Radiation protection

Nuclear reactors
 fission
 fusion

Thermonuclear reactions
Nuclear fission
 products
Nuclear fusion
Nuclear spallation

Physical effects of radiations
Chemical effects of radiations
 ionizing radiations
Biological effects of radiation
Radiation monitoring
Radiation protection

Dosimetry
Radiochemistry

ATOMIC AND MOLECULAR PHYSICS

Atoms
Molecules
Physics fundamentals

Orbital calculation methods

Mesic Atoms

Atoms, mesic

ATOMS

Atoms
 electron scattering
 excitation
 magnetic moment
 structure
Atoms, mesic
Constants
 fundamental
Gyromagnetic ratio
Ionization potential
Atomic mass
Atomic weight
Atomic beams
Periodic system

Elements
 origin
 relative abundances
Isotopes

Mass spectrometers
 accessories
 applications
Tracers
Optical pumping
Orbital calculation methods

Isotopes

Isotopes
 detection
 relative abundances
Mass spectra
Isotope exchanges
Isotope separation
Mass spectrometers
 accessories
 applications

MOLECULES

Molecules
 configuration and dimensions
 inorganic
 organic
 dissociation
 dissociation energies
 excitation
 intermolecular mechanics
 internal mechanics
 electronic structure
 nuclear coupling
 vibration and rotation

Molecules
 moments
 relaxation
Bonds
Valency
Chemical structure
Spectra
Molecular beams
Molecular weight
Avogadro's number
Polymers
Isomerism
Molecules, mesic
Free radicals
Orbital calculation methods

Macromolecules

SOLID-STATE PHYSICS

Solids
 structure
 theory
Electron gas
Cyclotron resonance
Metals
 theory
Equations of state
 solid

Crystals
Crystals
 internal fields
Crystal properties
Colour centres
Crystal structure
Crystal structure, atomic
Physical effects of radiations
Orbital calculation methods

LATTICE MECHANICS

Crystals
 lattice mechanics

Acoustic wave propagation
 ultrasonic
Scattering
 acoustic waves
Diffraction
 acoustic waves
Absorption
 acoustic waves
Transmission
 acoustic waves

Thermal Properties

Specific heat
Heat capacity
Thermal expansion
Thermal transformations
Melting
Melting point

Conductivity, thermal
solids
Equations of state
solid

ELECTRON STATES

Crystals
electron states
excitons
internal fields
Crystal structure
Crystal properties
Electron gas

Cyclotron resonance
Electron beams
effects
Electrons
scattering
absorption
radiation

DEFECT PROPERTIES

Crystal structure
Crystals
imperfections
etching
twinning

Slip
Cold working
Heat treatment
Elastic deformation
Plastic deformation

Diffusion

Diffusion

Colour Centres

Colour centres
Absorption
light
X-rays
effects

Radiation Effects

Physical effects of radiations
Electron beams
effects
Ion beams
X-rays
effects

Protons
effects
Neutrons
effects
Mesons
effects
Gamma-rays
effects

ELECTRICAL PROPERTIES OF SOLIDS

Electricity
Electrical measurement
Conduction, electrical
Electron gas
Conductivity, electrical
electrolytic
Resistance, electrical
Contact resistance
Contact potential
Current, electrical
Fluctuations
electrical
Skin effect
Eddy currents

Magnetoelectric effects
Hall effect
Magnetoresistance
Electro-optical effects
Acoustoelectric effects
Superconductivity
Electrokinetic effects

Semiconductors

Semiconductors
Semiconducting materials
germanium
indium antimonide
silicon

Semiconducting devices
diodes and junctions
transistors
Rectifiers

Magnetoelectric effects
Hall effect
Magnetoresistance

Photoconductivity

Photoelectricity
Photoconductivity
Photovoltaic effects,

Thermoelectric Properties

Thermoelectricity
Thermocouples

Pyroelectricity

Dielectric Properties

Electric fields
Electric charge
Space charge
Contact potential

Breakdown, electric
solids
Hysteresis
Relaxation
Electric strength
Electrets
Rochelle salt

Dielectric phenomena
Dielectric measurement
Dielectric properties of
solids [substances]
Ferroelectric materials
Ferroelectric phenomena

Piezoelectricity
Piezoelectric oscillations
Electrostriction
Electroluminescence
Dielectric devices
Pyroelectricity

OPTICAL PROPERTIES OF SOLIDS

Optics
Velocity
light
Refraction
light
Refractive index
light
Dispersion, optical
Optical constants
Optical materials
Absorption
light
Transmission
light
Transparency
Pleochroism
Filters, optical
Reflection
light
Reflectivity
Optical films
Optical constants

Interference
light
Interferometry
light
Interferometers
light
Diffraction
light
Diffraction gratings
Scattering
light
Diffusion, light

Polarized light
Double refraction
flow
mechanical
Optical rotation
Magneto-optical effects
Electro-optical effects
Photoelasticity
Spectra
continuous
flames
resonance
atoms
inorganic molecules
diatomic
diatomic, radiofrequency
polyatomic
polyatomic, radiofrequency
inorganic solids
radiofrequency
organic molecules and
infrared [substances]
radiofrequency
Raman spectra
inorganic
organic
Stark effect
Zeeman effect
Spectral line breadth
Electro-optical effects
X-ray spectra
absorption
emission

Luminescence

Luminescence
inorganic
organic
Electroluminescence
Thermoluminescence
Luminescent devices

Colour centres

MAGNETIC PROPERTIES OF SOLIDS

Magnetism
Magnetic fields
Ferromagnetism
Magnetization state
Magnetization process
Ferromagnetic relaxation
Antiferromagnetism
Ferrimagnetism
Antiferrimagnetism
Paramagnetism
Diamagnetism
Gyromagnetic ratio
Magnetic devices
Ferrites

Magnetic properties of
ferromagnetic [substances
antiferromagnetic
ferrimagnetic
antiferrimagnetic
paramagnetic
diamagnetic
transitions
Magnetoelectric effects
Magnetoresistance
Hall effect
Magnetomechanical effects
Gyromagnetic effect
Magnetostriction
Magneto-optical effects
Magnetothermal effects
Magnetoacoustic effects
Zeeman effect

Magnetic Resonances

Ferromagnetic resonance
Ferromagnetic relaxation
Antiferromagnetic resonance
Ferrimagnetic resonance
Antiferrimagnetic resonance
Cyclotron resonance

Paramagnetic resonance and
[relaxation
Nuclear magnetic resonance
[and relaxation
Nuclear quadrupole resonance
Masers
Optical pumping

MECHANICAL PROPERTIES OF SOLIDS

Elasticity
Elastic constants
Stress analysis
Photoelasticity
Stress/strain relations
Stresses, internal
Strain gauges
Elastic limit
Internal friction
Elastic deformation
Bending
Torsion

Mechanical strength
Breaking strength
Impact
Fracture
Brittleness

Plasticity
Plastic deformation
Plastic flow
Slip
Viscoelasticity
Compressibility
Elastic fatigue
Elastic relaxation
Hysteresis
Creep

Adhesion
Abrasion
Hardness
Work hardening
Heat treatment
Cold working
Stresses, internal

Rheology
Thixotropy
High-pressure phenomena and
[effects
Friction
Lubrication

STRUCTURE OF SOLIDS

Phase transformations
Crystal structure
Metals
theory
Density
solids

Solids
structure
theory
Crystal properties
Crystals

CRYSTALLOGRAPHY

Crystallography
mathematical
Crystals
electron states
etching
faces
growth
imperfections
lattice mechanics
orientation
twinning
excitons
internal fields

Crystal chemistry
Crystallization
Heat of crystallization
Polymorphism
Crystal properties
Colour centres
Counters
crystal
Crystal structure

Mineralogy

CRYSTAL LATTICE STRUCTURES

Crystal structure, atomic
elements
inorganic compounds
organic compounds
X-ray crystallography
apparatus
calculation apparatus
calculation methods
technique

X-ray examination of materials
microstructure
molecular structure
Electron diffraction crystallography
Electron diffraction examination
Electron microscope examination
Neutron diffraction crystallography
Neutron diffraction examination

ALLOYS . METALLURGY

Alloys
Metallurgy
Metals
theory
Solid solutions
Steel
Zone refining
Sputtering
Sintering

Crystal structure, atomic
alloys
Phase transformations
Heat treatment
Cold working

OTHER SOLID FORMS

Amorphous state
Vitreous state
Glass
Plastics
Polymers
Granular structure
Powders
Fibres
Membranes
Waxes

Brittleness
Particle size
Sintering
Porosity
Permeability, mechanical

Surfaces . Films . Adsorption

Surface phenomena
Surface texture
Surface energy
Surface measurement

Films
solid
Membranes
Filters

Adsorption
Adsorbed layers
Heat of adsorption
Sorption

Permeability, mechanical
Diffusion, solids

MICROSTRUCTURE EXAMINATION

X-ray examination of materials
microstructure
molecular structure
Radiography

Electron diffraction exami-
[nation
Electron microscope exami-
[nation
Electron microscopes
Electron microscopy
Ion microscopes
Microscopy

Neutron diffraction examination

Granular structure
Particle size
Surface texture

PHYSICAL CHEMISTRY

Physical chemistry
Quantum chemistry
Atomic weight
Molecular weight
Molecular weight determination
Avogadro's number
Periodic system
Elements
origin
relative abundances
Bonds
Valency
Chemical structure

Polymers
Polymerization
Isomerism

Laboratory apparatus
Balances
Pumps
Centrifuges
Distillation
Filters
Chemical technology
Precipitation

PHOTOCHEMISTRY

RADIATION CHEMISTRY

Chemical effects of radiations
acoustic waves
ionizing radiations

Nuclear reactions
chemical effects
Photochemistry
Photophoresis

DISPERSIONS . COLLOIDS

Colloids
Thixotropy
Solutions
Solubility
Heat of solution
Osmosis
Membranes
Sols
Gels
Emulsions
Suspensions
Precipitation

Aerosols
Foams
Particle size
Centrifuges
Sedimentation
Filters
Surface phenomena
Chromatography
Phase transformations

THERMOCHEMISTRY . REACTIONS

Phase equilibrium
Crystal chemistry
Reaction kinetics
Chemical reactions
Dissociation
Oxidation
Exchanges, chemical
Isotope exchanges

Heat of adsorption
Heat of reaction
Heat of formation
Heat of dissociation
Explosions
Detonation
Combustion
Heat of combustion
Catalysis

ELECTROCHEMISTRY

Electrochemistry
electrodes
Electrolysis
Conductivity, electrical
electrolytic
Ions, electrolytic

Ion velocity
electrolytic
Electrophoresis
Zeta-potential
Electrolytic deposition
Dissociation
electrolytic

PHYSICAL METHODS OF CHEMICAL ANALYSIS

Chemical analysis
adsorption
electrochemical
by mass spectrometry
by nuclear reactions
radioactive
X-ray

Spectrochemical analysis
Tracers
Radioactive tracers
Radiochemistry

GEOFYSICS

Geophysics
Gravity
Seismology
Seismic waves
Seismographs
Terrestrial electricity

Earth
age
composition
heat
rotation
Radioactive dating
Geophysical prospecting
Oceanography
Tides
Seawater
Glaciers

ATMOSPHERE

Meteorology
Meteorological instruments
Weather
Satellites, artificial
Hygrometers
Anemometers
Atmospheric pressure
Humidity
Atmosphere
composition
humidity
movements
radioactivity
structure
temperature
thermodynamics
Atmospheric disturbances
Thunderstorms

Sunlight
Sky brightness
Wind
Clouds
Snow
Ice
Rain
Fog
Condensation
Evaporation
Climatology
Atmospheric optics
Atmospheric spectra
Visibility
Atmospheric electricity
Atmospherics
Lightning
Atmospheric acoustics

UPPER ATMOSPHERE IONOSPHERE

Ionosphere
Ionosphere measuring apparatus
Ionization, atmosphere
Atmospheric disturbances
Atmosphere
radioactivity
radiation belts
movements
structure

Atmospheric optics
Atmospheric spectra
Visibility
Airglow
Twilight
Zodiacal light
Atmospheric electricity
Atmospherics
Aurora
Lightning
Atmospheric acoustics

GEOMAGNETISM

Magnetism
Magnetic storms
Compasses

Earth
magnetic field

BIOPHYSICS . PHYSIOLOGICAL PHYSICS

Biology
Biophysics
Biological technique and
Physiology [instruments]
Zoology
Medical science
Proteins
Blood
Bone

Biological effect of radiations
acoustic waves
ionizing radiations
Radiography
Hygiene
Radiation protection
Dosimetry

Vision

Vision
Colour vision
Eye
Stereoscopy

Hearing . Speech

Ear
Speech
Hearing

Hearing aids
Noise

TECHNIQUE . MATERIALS

Laboratory apparatus and
[technique]
Low-temperature technique
Vacuum technique
Leak detection

Biological technique
Chemical technology
Metallurgy
Zone melting

The chemical elements are listed by name, followed by their compounds. Organic compounds are grouped under the heading "Organic compounds". Collective headings are provided for a few groups of elements, such as "Halogens", "Inert gases", as well as for the individual elements. Headings for a few miscellaneous substances, such as "Ice", "Paper", "Wood", are also provided.